

High Temperature Structures With Inherent Protection, Phase I

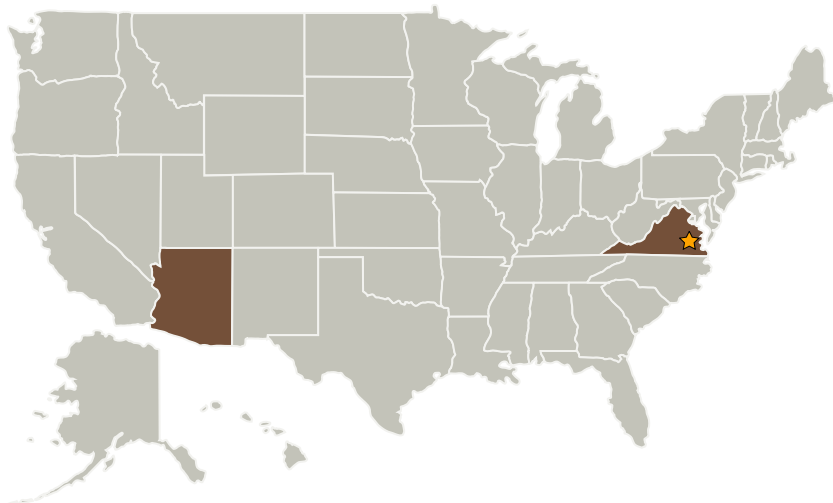
Completed Technology Project (2005 - 2005)



Project Introduction

The hot structures for current space vehicles require an atmospheric entry thermal protection system. Reusable hot structures that can function without requiring any atmospheric entry thermal protection system for space vehicle would constitute a paradigm. A high temperature stable fiber reinforcement and a ceramic material that exhibits atmospheric entry thermal stability can be combined into a composite which possess the mechanical properties to serve as a reusable hot structure that can function without any atmospheric entry thermal protection system. This unique and new ceramic matrix composite (CMC) will be developed and characterized to demonstrate it can meet the requirements of a reusable hot structure for space vehicles which can operate without any atmospheric entry thermal protection system and optimized samples will be delivered for more detailed testing at NASA

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
MER Corporation	Supporting Organization	Industry	Tucson, Arizona



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Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Arizona

Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

James C Withers

Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.3 Thermal Protection Components and Systems
 - └ TX14.3.2 Thermal Protection Systems